

Application No.: 10/708,339

Docket No.: 22040-00016-US2

REMARKS

Claims 1-4 remain pending in this application. Claim 1 is independent. No claims have been added or canceled by this response.

Applicants note with appreciation that the anticipation rejection of claims 1-4 over Franca-Neto and the unpatentability rejection of claim 4 over Franca-Neto in view of Sechi have been withdrawn.

Unpatentability over Sechi

Withdrawal of the rejection of claims 1-4 under 35 U.S.C. §103(a) as being unpatentable over Sechi (US 4,409,557) (FIG. 3) is requested.

Legal Requirements for Unpatentability

At the outset, Applicant notes that, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim limitations.¹ Further, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure.²

Deficiencies of Sechi

The applied art does not teach or suggest an amplifier circuit suitable for amplifying an AM broadcast signal which includes, among other features, "FET means for amplifying the AM broadcast signal and reducing a flicker noise level in the amplifier below an N-MOS transistor equivalent flicker noise," as recited in independent claim 1.

¹ See MPEP §2143.

² *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) and See MPEP §2143.

Application No.: 10/708,339

Docket No.: 22040-00016-US2

Figure 3 of Sechi teaches bandpass filter 10 with an active element to produce a high Q for use in various electronic warfare systems operating in the range of, for example, 10 GHz or higher (see col. 3, line 40 and col. 4, line 45).

The Examiner offers "tuning circuit 33" (more correctly believed to be "tunable resonator" 32) as being "designed to reduce the noise generated by amplifier 21a and 21b," and further asserts that "it requires only routine skill in the art to replace the bipolar transistors with the p-type MOSFETs." Applicants respectfully disagree with both assertions.

Actually, NPN bipolar transistors 21a and 21b (and FETs 20a and 20b in other embodiments) are identified in Sechi as being "negative resistance means" which are connected in cascade to offset the undesirable (positive) resistance of resonator circuit 32. (See Sechi at Abstract, at col. 1, lines 48-68, and at col. 3, lines 54-56).

Sechi is silent on "reducing noise" of any of the active elements, whether noise from dual gate FET 20, the combination of FETs 20a and 20b (FIG. 1), or from the combination of NPN bipolar transistors 21a and 21b. Sechi is even further silent on any recognition of $1/f$ "flicker noise" problems, which is a problem at AM broadcast frequencies, as discussed in Applicants' disclosure, and as solved by Applicants' claimed invention. The reason that Sechi is silent on flicker noise is that this phenomenon is not present at the frequencies of interest in Sechi.

Rejections are Based upon Impermissible Hindsight

The Examiner's assertion cited above and rejections appear to be the product of impermissible hindsight, based upon Applicant's disclosure and problem solution.

It is impermissible within the framework of 35 U.S.C. §103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one skilled in the art.³

³ *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 230 USPQ 416 (Fed. Cir. 1986).

Application No.: 10/708,339

Docket No.: 22040-00016-US2

Further in this regard, As the Court of Customs and Patent Appeals, predecessor to the Federal Circuit, has held:

All relevant teachings of cited references must be considered in determining what they fairly teach to one having ordinary skill in the art. The relevant portions of a reference include not only those teachings which would suggest particular aspects of an invention to one having ordinary skill in the art, but also those teachings which would lead such a person away from the claimed invention.⁴

The rejections in the Official Action amount, in substance, to nothing more than hindsight reconstruction of Applicants' invention by relying on isolated teachings of the applied art, without considering the overall context within which those teachings are presented. Without benefit of Applicants' disclosure, a person having ordinary skill in the art would not know what portions of [Sechi] to consider, and what portions to disregard as irrelevant or misleading.⁵

The Examiner continues to impermissibly read the means plus function limitation relating to "FET means *for amplifying the AM broadcast signal and reducing a flicker noise level in the amplifier below an N-MOS transistor equivalent flicker noise*" onto Sechi.

"There are three possible sources for a motivation to combine [or modify] references: the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art."⁶ Further with regard to the level of skill of practitioners in the art, there is nothing in the statutes or the case law which makes "that which is within the capabilities of one skilled in the art" synonymous with obviousness.⁷ The level of skill in the art cannot be relied upon to provide the suggestion to combine references.⁸

This is particularly relevant to the Examiner's assertion that "[i]t requires only routine skill in the art to replace the bipolar transistors with the p-type MOSFETs," a statement with which Applicants respectfully disagree.

⁴ *In re Mercier*, 185 USPQ 774, 778 (CCPA 1975).

⁵ *In re Wesslau*, 147 USPQ 391, 393 (CCPA 1965).

⁶ See MPEP §2143.01, citing *In re Rouffet*, 149 F.3d, 1350, 1357, 47 USPQ2d 1433, 1457-8 (Fed. Cir. 1998).

⁷ *Ex parte Gerlach and Woerner*, 212 USPQ 471 (PTO Bd. App. 1980).

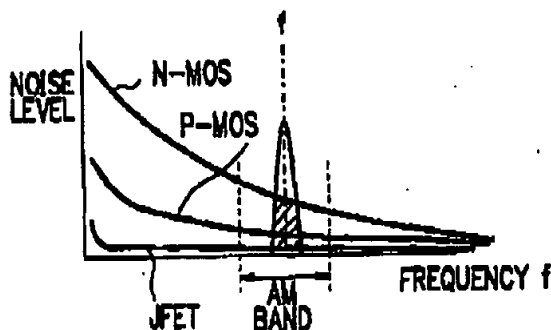
⁸ See MPEP §2143.01, citing *Al-Site Corp. v. VSI Int'l Inc.*, 50 USPQ2d 1161 (Fed. Cir. 1999).

Application No.: 10/708,339

Docket No.: 22040-00016-US2

Applicant reiterates that a person with skill in the art would not be motivated to look to Sechi to solve the flicker noise problems at AM broadcast frequencies addressed by Applicant's claimed invention. As discussed above, Sechi is silent on solving flicker noise problems, as this physical phenomenon is not present at gigahertz frequency ranges.

With respect to the Examiner's assertion that Sechi reduces noise of the amplifiers, Applicants' FIG. 3 showing flicker noise ("1/f" noise) is reproduced below, with a typical bandpass filter characteristic such as provided by Sechi (resonator circuit 32) superimposed in the AM band.



As can clearly be seen, the bandpass filter of Sechi, if operated in the AM band, blocks noise outside the passband (as would be expected for any bandpass filter), and passes/amplifies the flicker noise component within the passband. It is the *signal plus noise* within the passband which is of interest in both Sechi and Applicants' disclosure. If applied in the AM band, Sechi clearly does not reduce any flicker noise within the band, but rather *amplifies* the flicker noise that is present within the band.

In contrast, Applicants disclosed and claimed invention makes it possible, by use of P-MOSFETs, to reduce flicker noise in a frequency band, even when otherwise within the passband of the bandpass filter.

As can be seen from the above figure, JFET amplifiers offer better flicker noise performance. However, Applicants have opted for easier MOS fabrication (as discussed in the

Application No.: 10/708,339

Docket No.: 22040-00016-US2

disclosure), thus leaving P-MOS transistors as the better choice for the AM band, if manufacturability is considered, as Applicants have done.

Further, as discussed above, Sechi is stated as being operated at gigahertz frequencies, which are along the far right-hand side of the frequency axis, at or beyond the point along the frequency axis that the flicker noise levels of all three amplifying approaches (N-MOS, P-MOS, and JFET) converge and approach "0" flicker noise, supporting Applicants' contention that Sechi need not be concerned with flicker noise.

Conclusion

In view of the above, withdrawal of the rejection, and allowance of claims 1-4 are respectfully requested. Accordingly, applicant believes that each of pending claims 1-4 in this application is in condition for allowance.

In the event the Examiner believes that an interview would be helpful in resolving any outstanding issues in this case, the undersigned attorney is available at the telephone number indicated below.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 22-0185, under Order No. 22040-00016-US2 from which the undersigned is authorized to draw.

Respectfully submitted,

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